

WEST Search History

DATE: Thursday, February 16, 2006

Hide?	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
	<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L11	noursei same L9	2
<input type="checkbox"/>	L10	streptomyces same L8	6
<input type="checkbox"/>	L9	dipeptide same L8	42
<input type="checkbox"/>	L8	(gene or sequence or polynucleotide or clone or recombinant) same L6	298
<input type="checkbox"/>	L7	(gene or sequence or polynucleotide or clone or recombinant) same L1	296
<input type="checkbox"/>	L6	((cyclic same dipeptide same oxidase) or (dipeptide same oxidase) or CDO or albC)	11090
<input type="checkbox"/>	L5	cyclic same L4	1
<input type="checkbox"/>	L4	dipeptide same L2	42
<input type="checkbox"/>	L3	diketopiperazine same L2	0
<input type="checkbox"/>	L2	(gene or sequence or polynucleotide or clone or recombinant) same L1	296
<input type="checkbox"/>	L1	((cyclic same dipeptide same oxidase) or (dipeptide same oxidase) or CDO)	11012

END OF SEARCH HISTORY

=> index bioscience medicine

INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, ANTE, AQUALINE, AQUASCI, BIOENG, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA, CAPLUS, CEABA-VTB, CIN, CONFSCI, CROPB, CROPU, DDFB, DDFU, DGENE, DISSABS, DRUGB, DRUGMONOG2, DRUGU, EMBAL, EMBASE, ...' ENTERED AT 12:47:13 ON 16 FEB 2006

=> s ((cycl?(w)diptide(w)oxidase#) or (peptide(w)oxidase#) or (peptide(w)synthetase#) or CDO or albC)

80 FILE AGRICOLA
25 FILE ANABSTR
17 FILE ANTE
4 FILE AQUALINE
30 FILE AQUASCI
100 FILE BIOENG
736 FILE BIOSIS
106 FILE BIOTECHABS
106 FILE BIOTECHDS
12 FILES SEARCHED...
314 FILE BIOTECHNO
183 FILE CABA
8659 FILE CAPLUS
75 FILE CEABA-VTB
6 FILE CIN
27 FILE CONFSCI
4 FILE CROPU
3 FILE DDFB
21 FILES SEARCHED...
18 FILE DDFU
2129 FILE DGENE
122 FILE DISSABS
3 FILE DRUGB
25 FILES SEARCHED...
23 FILE DRUGU
14 FILE EMBAL
536 FILE EMBASE
534 FILE ESBIODBASE
45 FILE FEDRIP
2 FILE FROSTI
34 FILES SEARCHED...
16 FILE FSTA
2255 FILE GENBANK
7 FILE HEALSAFE
741 FILE IFIPAT
475 FILE JICST-EPLUS
374 FILE LIFESCI
656 FILE MEDLINE
20 FILE NIOSHTIC
85 FILE NTIS
4 FILE OCEAN
1006 FILE PASCAL
50 FILES SEARCHED...
2 FILE PHIN
3331 FILE PROMT
1 FILE PROUSDDR
3 FILE RDISCLOSURE
1652 FILE SCISEARCH
1 FILE SYNTHLINE
963 FILE TOXCENTER
3233 FILE USPATFULL
271 FILE USPAT2
1 FILE VETU
5 FILE WATER
1741 FILE WPIDS
68 FILES SEARCHED...
3 FILE WPIFV
1741 FILE WPINDEX
3 FILE IPA
71 FILES SEARCHED...
2773 FILE NLDB

54 FILES HAVE ONE OR MORE ANSWERS, 73 FILES SEARCHED IN STNINDEX

L1 QUE ((CYCL?(W) DIPEPTIDE(W) OXIDASE#) OR (PEPTIDE(W) OXIDASE#) OR (PEPTIDE(W) SYNTHETASE#) OR CDO OR ALBC)

=> d rank

F1	8659	CAPLUS
F2	3331	PROMT
F3	3233	USPATFULL
F4	2773	NLDB
F5	2255	GENBANK
F6	2129	DGENE
F7	1741	WPIDS
F8	1741	WPINDEX
F9	1652	SCISEARCH
F10	1006	PASCAL
F11	963	TOXCENTER
F12	741	IFIPAT
F13	736	BIOSIS
F14	656	MEDLINE
F15	536	EMBASE
F16	534	ESBIOBASE
F17	475	JICST-EPLUS
F18	374	LIFESCI
F19	314	BIOTECHNO
F20	271	USPAT2
F21	183	CABA
F22	122	DISSABS
F23	106	BIOTECHABS
F24	106	BIOTECHDS
F25	100	BIOENG

=> file f1-f4, f7, f9-f19

FILE 'CAPLUS' ENTERED AT 12:53:24 ON 16 FEB 2006
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=> s L1

5 FILES SEARCHED...

7 FILES SEARCHED...

L2 27724 L1

=> s (gene# or sequence# or polynucleotide# or clone# or recombinant or express?)(s)L2

3 FILES SEARCHED...

7 FILES SEARCHED...

13 FILES SEARCHED...

L3 3371 (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINANT
OR EXPRESS?)(S) L2

=> s streptomyces(s)L3

L4 382 STREPTOMYCES(S) L3

=> s (diptide(s)derivative#)(s)L4

L5 2 (DIPEPTIDE(S) DERIVATIVE#)(S) L4

=> s diptide#(s)L4

L6 19 DIPEPTIDE#(S) L4

=> dup rem l6

PROCESSING COMPLETED FOR L6

L7 10 DUP REM L6 (9 DUPLICATES REMOVED)

=> d ibib abs l7 1-10

L7 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2006:15762 CAPLUS

DOCUMENT NUMBER: 144:101996

TITLE: Producing dipeptide or dipeptide derivative with
dipeptide-synthesizing enzymes

INVENTOR(S): Hashimoto, Shinichi; Ikeda, Hajime; Tabata, Kazuhiko

PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan

SOURCE: PCT Int. Appl., 121 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2006001381	A1	20060105	WO 2005-JP11638	20050624
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK,
SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW

RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF,
CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM,
KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG,
KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: JP 2004-189008 A 20040625

AB The present invention provides a method of producing a dipeptide or a

dipeptide deriv. by using, an enzyme having an activity of forming a dipeptide or dipeptide deriv. from amino acids or amino acid derivs. or an optionally processed culture of cells having an ability to produce the above protein, supplying the enzyme source, amino acids or amino acid derivs. and ATP into an aq. medium, thus forming and accumulating the dipeptide or the dipeptide deriv. in the medium and then harvesting the dipeptide or the dipeptide deriv. from the medium. The dipeptide synthesis method using Bacillus dipeptide-forming enzyme has been developed. The ywfE genes for the D-alanine:D-alanine ligase have been cloned from Bacillus species. The prodn. of various dipeptides by the culture of transformant E. coli was demonstrated. The ***albC***
genes for the ***dipeptide*** -forming enzyme have been
cloned from albonoursin-producing ***Streptomyces*** species
S. noursei strain IFO15452 and S. albulus strain IF014147.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 10 USPATFULL on STN DUPLICATE 1

ACCESSION NUMBER: 2005:330646 USPATFULL

TITLE: Process for producing dipeptides

INVENTOR(S): Hashimoto, Shin-ichi, Hofu-shi, JAPAN

Tabata, Kazuhiko, Tokyo, JAPAN

PATENT ASSIGNEE(S): KYOWA HAKKO KOGYO CO., LTD., Tokyo, JAPAN (non-U.S.
corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 2005287626 A1 20051229

APPLICATION INFO.: US 2005-165211 A1 20050624 (11)

NUMBER DATE

PRIORITY INFORMATION: JP 2004-189011 20040625

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: NIXON & VANDERHYE, PC, 901 NORTH GLEBE ROAD, 11TH
FLOOR, ARLINGTON, VA, 22203, US

NUMBER OF CLAIMS: 15

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 6 Drawing Page(s)

LINE COUNT: 8029

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a process for producing a dipeptide which comprises culturing in a medium a microorganism which has the ability to produce a protein having the activity to form the dipeptide from one or more kinds of amino acids and which has the ability to produce at least one of said one or more kinds of amino acids, allowing the dipeptide to form and accumulate in the medium, and recovering the dipeptide from the medium.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 3 OF 10 USPATFULL on STN DUPLICATE 2

ACCESSION NUMBER: 2005:49850 USPATFULL

TITLE: Bacterial nitric oxide synthases and uses thereof

INVENTOR(S): Loria, Rosemary, Ithaca, NY, UNITED STATES

Crane, Brian, Ithaca, NY, UNITED STATES

Kers, Johan, Ithaca, NY, UNITED STATES

Gibson, Donna M., Ithaca, NY, UNITED STATES

Wach, Michael J., Greenbelt, MD, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2005042645 A1 20050224

APPLICATION INFO.: US 2004-858706 A1 20040602 (10)

NUMBER DATE

PRIORITY INFORMATION: US 2003-475111P 20030602 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION
 LEGAL REPRESENTATIVE: Michael L. Goldman, Esq., NIXON PEABODY LLP, Clinton
 Square, P.O. Box 31051, Rochester, NY, 14603-1051
 NUMBER OF CLAIMS: 74
 EXEMPLARY CLAIM: 1
 NUMBER OF DRAWINGS: 7 Drawing Page(s)
 LINE COUNT: 2664
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to isolated nucleic acid molecules encoding nitric oxide synthases. The isolated nucleic acid molecules and their encoded protein or polypeptides are useful in methods for attaching a nitrogen group to a target moiety of a compound and for synthesizing a nitrogen-modified compound in a transgenic host cell. The present invention also relates to expression systems and host cells containing the nucleic acids of the present invention, as well as a method of recombinantly producing the nitric oxide synthases of the present invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1168973 CAPLUS

DOCUMENT NUMBER: 143:433720

TITLE: Development of dipeptide synthesis method using
 Streptomyces enzymes

INVENTOR(S): Hashimoto, Shin-Ichi; Tabata, Kazuhiko; Noguchi,
 Ayako; Adachi, Yugo

PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Japan

SOURCE: PCT Int. Appl., 47 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2005103260	A1	20051103	WO 2005-JP7626	20050421
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W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
 CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,
 LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA,
 NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL,
 SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
 ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
 MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2004-125486 A 20040421

AB The dipeptide synthesis method using Streptomyces dipeptide-forming enzyme has been developed. The ***albC*** ***genes*** for the ***dipeptide*** -forming enzyme have been ***cloned*** from albonoursin-producing ***Streptomyces*** species S. noursei strain IFO15452 and S. albus strain IF014147. These enzymes (or sequence variants) are expressed in the host E. coli cells that have been transformed with the vectors contg. the albC transgenes (or sequence variants). Dipeptides are produced from amino acids in the presence of ATP by using the transformant E. coli cultured materials, cell lysate or partially purified fractions as the enzyme sources. L- or D-amino acids including Ala, Gln, Glu, Val, Leu, Ile, Pro, Phe, Trp, Met, Ser, Thr, Cys, Asn, Tyr, Lys, Arg, His, Asp, .alpha.-amino butyric acid, azaserine, theanine, 4-hydroxyproline, 3-hydroxyproline, ornithine, citrulline and 6-diazo-5-oxonorleucine are claimed as applicable substrates for the reaction. The prodn. of L-Leu-L-Phe and L-Phe-L-Leu in the L-Phe and L-Leu-contg. medium by the culture of transformant E. coli was demonstrated. The prodn. of the dipeptides and cyclo dipeptides by the incubation of the purified enzyme with amino acids was also demonstrated.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS

RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2005:330647 USPATFULL
TITLE: Process for producing dipeptides or dipeptide
derivatives
INVENTOR(S): Hashimoto, Shin-ichi, Hofu-shi, JAPAN
Ikeda, Hajime, Hofu-shi, JAPAN
Yagasaki, Makoto, Tokyo, JAPAN
PATENT ASSIGNEE(S): Kyowa Hakko Kogyo Co., Ltd., Tokyo, JAPAN (non-U.S.
corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 2005287627 A1 20051229
APPLICATION INFO.: US 2005-165226 A1 20050624 (11)

NUMBER DATE

PRIORITY INFORMATION: JP 2004-189007 20040625
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: NIXON & VANDERHYE, PC, 901 NORTH GLEBE ROAD, 11TH
FLOOR, ARLINGTON, VA, 22203, US
NUMBER OF CLAIMS: 34
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 4 Drawing Page(s)
LINE COUNT: 9924

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a process for producing a dipeptide or a
dipeptide derivative using a phosphate donor, a substance selected from
the group consisting of adenosine-5'-monophosphate, adenosine-5'-
diphosphate and adenosine-5'-triphosphate, one or more kinds of amino
acids or amino acid derivatives, and as enzyme sources, a protein having
polyphosphate kinase activity, or a culture of cells having the ability
to produce the protein or a treated matter of the culture, and a protein
having the activity to ATP-dependently form the dipeptide or dipeptide
derivative from one or more kinds of amino acids or amino acid
derivatives, or a culture of cells having the ability to produce the
protein or a treated matter of the culture.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 6 OF 10 USPATFULL on STN
ACCESSION NUMBER: 2003:78516 USPATFULL
TITLE: STAPHYLOCOCCUS AUREUS POLYNUCLEOTIDES AND SEQUENCES
INVENTOR(S): KUNSCH, CHARLES A., GAITHERSBURG, MD, UNITED STATES
CHOI, GIL A., ROCKVILLE, MD, UNITED STATES
BARASH, STEVEN C., ROCKVILLE, MD, UNITED STATES
DILLON, PATRICK J., GAITHERSBURG, MD, UNITED STATES
FANNON, MICHAEL R., SILVER SPRING, MD, UNITED STATES
ROSEN, CRAIG A., LAYTONSVILLE, MD, UNITED STATES

NUMBER KIND DATE

PATENT INFORMATION: US 2003054436 A1 20030320
US 6737248 B2 20040518
APPLICATION INFO.: US 1997-781986 A1 19970103 (8)

NUMBER DATE

PRIORITY INFORMATION: US 1996-9861P 19960105 (60)
DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: HUMAN GENOME SCIENCES INC, 9410 KEY WEST AVENUE,
ROCKVILLE, MD, 20850
NUMBER OF CLAIMS: 29
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 13414

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of *Staphylococcus aureus*, polypeptide sequences encoded by the polynucleotide sequences, corresponding polynucleotides and polypeptides, vectors and hosts comprising the polynucleotides, and assays and other uses thereof. The present invention further provides polynucleotide and polypeptide sequence information stored on computer readable media, and computer-based systems and methods which facilitate its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 7 OF 10 USPATFULL on STN

ACCESSION NUMBER: 2003:190673 USPATFULL

TITLE: *Staphylococcus aureus* polynucleotides and sequences

INVENTOR(S): Kunsch, Charles A., Norcross, GA, United States

Choi, Gil H., Rockville, MD, United States

Barash, Steven, Rockville, MD, United States

Dillon, Patrick J., Carlsbad, CA, United States

Fannon, Michael R., Silver Spring, MD, United States

Rosen, Craig A., Laytonsville, MD, United States

PATENT ASSIGNEE(S): Human Genome Sciences, Inc., Rockville, MD, United States (U.S. corporation)

NUMBER KIND DATE

PATENT INFORMATION: US 6593114 B1 20030715

APPLICATION INFO.: US 1997-956171 19971020 (8)

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 1997-781986, filed on 3 Jan 1997

NUMBER DATE

PRIORITY INFORMATION: US 1996-9861P 19960105 (60)

DOCUMENT TYPE: Utility

FILE SEGMENT: GRANTED

PRIMARY EXAMINER: Duffy, Patricia A.

LEGAL REPRESENTATIVE: Human Genome Sciences, Inc.

NUMBER OF CLAIMS: 15

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 2 Drawing Figure(s); 2 Drawing Page(s)

LINE COUNT: 7835

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides polynucleotide sequences of the genome of *Staphylococcus aureus*, polypeptide sequences encoded by the polynucleotide sequences, corresponding polynucleotides and polypeptides, vectors and hosts comprising the polynucleotides, and assays and other uses thereof. The present invention further provides polynucleotide and polypeptide sequence information stored on computer readable media, and computer-based systems and methods which facilitate its use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 8 OF 10 CAPLUS COPYRIGHT 2006 ACS on STN DUPLICATE 3

ACCESSION NUMBER: 2002:970708 CAPLUS

DOCUMENT NUMBER: 138:281989

TITLE: The Albonoursin Gene Cluster of *S. noursei*.

Biosynthesis of Diketopiperazine Metabolites

Independent of Nonribosomal Peptide Synthetases

AUTHOR(S): Lautru, Sylvie; Gondry, Muriel; Genet, Roger;

Pernodet, Jean-Luc

CORPORATE SOURCE: Departement d'Ingenierie et d'Etudes des Proteines,

CEA/Saclay, Gif-sur-Yvette, F91191, Fr.

SOURCE: Chemistry & Biology (2002), 9(12), 1355-1364

CODEN: CBOLE2; ISSN: 1074-5521

PUBLISHER: Cell Press

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Albonoursin [cyclo(DELTA.Phe-.DELTA.Leu)], an antibacterial peptide

produced by *Streptomyces noursei*, is one of the simplest representatives of the large diketopiperazine (DKP) family. Formation of .alpha.,beta. unsaturations was previously shown to occur on cyclo(L-Phe-L-Leu), catalyzed by the cyclic dipeptide oxidase (CDO). We used CDO peptide sequence information to isolate a 3.8 kb *S. noursei* DNA fragment that directs albonoursin biosynthesis in *Streptomyces lividans*. This fragment encompasses four complete genes: *albA* and *albB*, necessary for CDO activity; *albC*, sufficient for cyclic dipeptide precursor formation, although displaying no similarity to non ribosomal peptide synthetase (NRPS) genes; and *albD*, encoding a putative membrane protein. This first isolated DKP biosynthetic gene cluster should help to elucidate the mechanism of DKP formation, totally independent of NRPS, and to characterize novel DKP biosynthetic pathways that could be engineered to increase the mol. diversity of DKP derivs.

REFERENCE COUNT: 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 10 Elsevier BIOBASE COPYRIGHT 2006 Elsevier Science B.V. on STN DUPLICATE

ACCESSION NUMBER: 2000286617 ESBIOBASE

TITLE: The *txtAB* genes of the plant pathogen *Streptomyces acidiscabies* encode a peptide synthetase required for phytotoxin thaxtomin A production and pathogenicity

AUTHOR: Healy F.G.; Wach M.; Krasnoff S.B.; Gibson D.M.; Loria R.

CORPORATE SOURCE: R. Loria, Department of Plant Pathology, 334 Plant Science Building, Cornell University, Ithaca, NY 14853, United States.
E-mail: rl21@cornell.edu

SOURCE: Molecular Microbiology, (2000), 38/4 (794-804), 45 reference(s)

CODEN: MOMIEE ISSN: 0950-382X

DOCUMENT TYPE: Journal; Article

COUNTRY: United Kingdom

LANGUAGE: English

SUMMARY LANGUAGE: English

AB Four ****Streptomyces**** species have been described as the causal agents of scab disease, which affects economically important root and tuber crops worldwide. These species produce a family of cyclic ***dipeptides***, the thaxtomins, which alone mimic disease symptomatology. Structural considerations suggest that thaxtomins are synthesized non-ribosomally. Degenerate oligonucleotide primers were used to amplify conserved portions of the acyladenylation module of ***peptide*** ***synthetase*** ***genes*** from genomic DNA of representatives of the four species. Pairwise Southern hybridizations identified a ***peptide*** ***synthetase*** acyladenylation module conserved among three species. The complete nucleotide ***sequences*** of two ***peptide*** ***synthetase*** ***genes*** (*txtAB*) were determined from *S. acidiscabies* 84.104 cosmid library ***clones***. The organization of the deduced TxtA and TxtB ***peptide*** ***synthetase*** catalytic domains is consistent with the formation of N-methylated cyclic ***dipeptides*** such as thaxtomins. Based on high-performance liquid chromatography (HPLC) analysis, thaxtomin A production was abolished in *txtA* ***gene*** disruption mutants. Although the growth and morphological characteristics of the mutants were identical to those of the parent strain, *txtA* mutants were avirulent on potato tubers. Moreover, introduction of the thaxtomin synthetase cosmid into a *txtA* mutant restored both pathogenicity and thaxtomin A production, demonstrating a critical role for thaxtomins in pathogenesis.

L7 ANSWER 10 OF 10 SCISEARCH COPYRIGHT (c) 2006 The Thomson Corporation on STN DUPLICATE 5

ACCESSION NUMBER: 1998:325080 SCISEARCH

THE GENUINE ARTICLE: ZK570

TITLE: Molecular cloning of the actinomycin synthetase gene cluster from *Streptomyces chrysomallus* and functional heterologous expression of the gene encoding actinomycin synthetase II

AUTHOR: Schauwecker F; Pfennig F; Schroder W; Keller U (Reprint)

CORPORATE SOURCE: Tech Univ Berlin, Max Volmer Inst, Fachgebiet Biochem & Mol Biol, Franklinstr 29, D-10587 Berlin, Germany
(Reprint); Tech Univ Berlin, Max Volmer Inst, Fachgebiet Biochem & Mol Biol, D-10587 Berlin, Germany; Free Univ Berlin, Inst Biochem, D-14195 Berlin, Germany

COUNTRY OF AUTHOR: Germany

SOURCE: JOURNAL OF BACTERIOLOGY, (MAY 1998) Vol. 180, No. 9, pp. 2468-2474.
ISSN: 0021-9193.

PUBLISHER: AMER SOC MICROBIOLOGY, 1752 N ST NW, WASHINGTON, DC 20036-2904 USA

DOCUMENT TYPE: Article; Journal

LANGUAGE: English

REFERENCE COUNT: 32

ENTRY DATE: Entered STN: 1998
Last Updated on STN: 1998

ABSTRACT IS AVAILABLE IN THE ALL AND IALL FORMATS

AB The actinomycin synthetases ACMS I, TI, and III catalyze the assembly of the acyl peptide lactone precursor of actinomycin by a nonribosomal mechanism, we have cloned the genes of ACMS I (acmA) and ACMS II (acmB) by hybridization screening of a cosmid library of *Streptomyces chrysomallus* DNA with synthetic oligonucleotides derived from peptide sequences of the two enzymes. Their genes were found to be closely linked and are arranged in opposite orientations. Hybridization mapping and partial sequence analyses indicate that the gene of an additional peptide synthetase, most likely the gene of ACMS III (acmC), is located immediately downstream of acmB in the same orientation. The protein sequence of ACMS II, deduced from acmB, shows that the enzyme contains two amino acid activation domains, which are characteristic of peptide synthetases, and an additional epimerization domain. Heterologous ***expression*** of acmB from the mel promoter of plasmid PIJ702 in ****Streptomyces**** lividans yielded a functional 280-kDa ***peptide*** ***synthetase*** which activates threonine and valine as enzyme bound thioesters, It also catalyzes the ***dipeptide*** formation of threonyl-L-valine, which is epimerized to threonyl-D-valine. Both of these dipeptides are enzyme bound as thioesters. This catalytic activity is identical to the in vitro activity of ACMS II from *S. chrysomallus*.

=> d his

L1 QUE ((CYCL?(W) DIPEPTIDE(W) OXIDASE#) OR (PEPTIDE(W) OXIDASE#)

FILE 'CAPLUS, PROMT, USPATFULL, NLDB, WPIDS, SCISEARCH, PASCAL, TOXCENTER, IFIPAT, BIOSIS, MEDLINE, EMBASE, ESBIODBASE, JICST-EPLUS, LIFESCI, BIOTECHNO' ENTERED AT 12:53:24 ON 16 FEB 2006

L2 27724 S L1
L3 3371 S (GENE# OR SEQUENCE# OR POLYNUCLEOTIDE# OR CLONE# OR RECOMBINA
L4 382 S STREPTOMYCES(S)L3
L5 2 S (DIPEPTIDE(S)DERIVATIVE#)(S)L4
L6 19 S DIPEPTIDE#(S)L4
L7 10 DUP REM L6 (9 DUPLICATES REMOVED)

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